PROCEEDINGS PAPER

Cerebral venous circulatory disturbance as an informative prognostic marker for neonatal hemorrhagic stroke

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Paper Abstract

Neonatal hemorrhagic stroke (NHS) is a major problem of future generation's health due to the high rate of death and cognitive disability of newborns after NHS. The incidence of NHS in neonates cannot be predicted by standard diagnostic methods. Therefore, the identification of prognostic markers of NHS is crucial. There is evidence that stress-related alterations of cerebral blood flow (CBF) may contribute to NHS. Here, we assessed the stroke-associated CBF abnormalities for high prognosis of NHS using a new model of NHS induced by sound stress in the pre- and post-stroke state. With this aim, we used interdisciplinary methods such as a histological assay of brain tissues, laser speckle contrast imaging and Doppler coherent tomography to monitor cerebral circulation. Our results suggest that the venous stasis with such symptoms as progressive relaxation of cerebral veins, decrease the velocity of blood flow in them are prognostic markers for a risk of NHS and are an informative platform for a future study of corrections of cerebral venous circulatory disturbance related to NHS.

Paper Details